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EXAMINER

PHAN, HUY Q

ART UNIT	PAPER NUMBER
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2687

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,410

Applicant(s)

AHNLUND ET AL ✓

Examiner

Huy Q Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Amendment filed on date: 12/27/2004.
Claims 1-18 are still pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

3. The drawings were received on 12/27/2004. These drawings are accepted.

Claim Objections

4. Claims 14, 15, 17 and 18 are objected to because of the following informalities:
Claims 14 and 17 are duplicated.
Claims 15 and 18 are duplicated.
Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1-12, 15, 16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kotzin et al. (US-5,822,699).

Regarding claim 1, Kotzin et al. disclose a method for operating a radio telecommunications system comprising a mobile station and one or more cell site units capable of communicating by radio with the mobile station on at least two communication channels (fig. 1 and col. 2, line 55-col. 3, line 10) having different frequencies (col. 3, line 11-col. 4, line 67), the method comprising:

the mobile station receiving signals on each of the communication channels (col. 3, lines 37-50); and

the mobile station determining an estimate of the level of interference with signals on each of the communication channels (col. 3, line 37-col. 4, line 67).

Regarding claim 2, Kotzin et al. disclose the method as claimed in claim 1, comprising the step of transmitting to the mobile information specifying the communication channels (col. 3, lines 11-65; also see cols. 4-9).

Regarding claim 3, Kotzin et al. disclose the method as claimed in claim 2, wherein the said information specifies a frequency for each of the communication channels (col. 3, lines 11-65; also see cols. 4-9).

Regarding claim 4, Kotzin et al. disclose the method as claimed in claim 3, wherein the said step of receiving comprises receiving signals on communication channels whose carrier frequencies are specified by the said information (col. 3, lines 11-65; also see cols. 4-10).

Regarding claim 5, Kotzin et al. disclose the method as claimed in claim 1, comprising the step of the mobile station transmitting to a cell site unit information indicating the estimated levels of interference with signals on at least two of the communication channels (col. 3, lines 11-65; also see cols. 4-10).

Regarding claim 6, Kotzin et al. disclose the method as claimed in claim 1, wherein the mobile station is in traffic communication on a traffic communication channel (col. 3, lines 37-50), the telecommunications system comprises a handover controller for controlling handover of the mobile station from the current communication channel to another one of the communication channels (col. 4), and the method comprises the steps of:

the mobile station communicating to the handover controller via the current cell site unit information indicating the estimated levels of quality with signals on at least two of the communication channels (col. 2, lines 55-65; also see cols.9-10); and

the handover control unit determining to which of the cell site units to hand over traffic communication of the mobile station on the basis of at least that information indicating the estimated levels of interference (col. 2, lines 55-65; also see cols.9-10).

Regarding claim 7, Kotzin et al. disclose the method as claimed in claim 6, wherein the step of the handover control unit determining comprises determining to which communication channel of one of the cell site units to hand over traffic communication of the mobile station on the basis of at least that information indicating the estimated levels of interference (cols.9-10).

Regarding claim 8, Kotzin et al. disclose the method as claimed in claim 7, wherein the handover control unit determines to hand over to a channel having one of the lowest estimated levels of interference (cols.9-10).

Regarding claim 9, Kotzin et al. disclose the method as claimed in claim 1, wherein the mobile station stores an indication of a timing of the said signals on at least one of the communication channels and the mobile station interrupts another operation to receive the said signals at a time dependent on the stored indication of a timing (col. 7, line 57-col. 8, line 6; also see col. 1).

Regarding claim 10, Kotzin et al. disclose the method as claimed in claim 9, wherein the indication of a timing is an indication of the difference in timing between

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signals on the said communication channels (col. 7, line 57-col. 8, line 6; also see col. 1).

Regarding claim 11, Kotzin et al. disclose a mobile station (figs. 1-2, mobile unit 113) for operation in a telecommunications system comprising at least two cell site units each capable of communicating by radio with the mobile station on at least two communication channels (fig. 1 and col. 2, line 55-col. 3, line 10) having different frequencies (col. 3, line 11-col. 4, line 67); the mobile station comprising:

a receiver (figs. 1-2, unit 113) capable of receiving signals from a cell site units on a communication channel (col. 3, lines 37-50);

an interference estimation unit (figs. 1-2, unit 113) for estimating the level of interference on a communication channel on which the receiver receives signals (col. 2, lines 55-65; also see cols. 4-10); and

a channel analysis unit (figs. 1-2, unit 113) coupled to the receiver and the interference estimation unit for causing the receiver to receive signals from each of the cell site units on each of the respective communication channels in turn and receiving from the interference estimation unit an estimate of the level of interference on each of those channels (col. 2, lines 55-65; also see cols. 4-10).

Regarding claim 12, Kotzin et al. disclose the mobile station as claimed in claim 11, wherein the interference estimation unit is capable of estimating the level of

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interference by performing an error correction and/or signal recovery operation on received signals (col. 3, lines 50-65; also see cols. 4-10).

Regarding claims 15 and 18, Kotzin et al. disclose the mobile station as claimed in claim 11, wherein the channel analysis unit is capable of receiving via the receiver information specifying the said communication channels (col. 3, lines 11-65; also see cols. 4-10).

Regarding claim 16, Kotzin et al. disclose a method for operating a radio telecommunication system (fig. 1) comprising a mobile station (figs. 1-2, mobile unit 113) and one or more cell site units capable of communicating by radio with the mobile station on at least two communication channels (fig. 1 and col. 2, line 55-col. 3, line 10) having different frequencies (col. 3, line 11-col. 4, line 67); the method comprising:

the mobile station storing an indication of the timing difference between signals on the communication channels (known TDMA technique; col. 7, line 57-col. 8, line 6; also see col. 1);

the mobile station receiving signals on one of the communication channels (col. 3, lines 50-65; also see cols. 4-10); and

the mobile station interrupting said receiving in order to receive signals on another of the communication channels (col. 4, lines 63-67; also see cols. 4-10) at a time dependent on the stored indication (known TDMA technique; col. 7, line 57-col. 8, line 6; also see col. 1).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotzin et al. in view of Lidbrink et al. (US-6,466,767).

Regarding claim 13, Kotzin et al. disclose the mobile station as claimed in claim 12. But, Kotzin et al. fail to expressly teach wherein the said operation is performed on a training sequence of the received signals. However in analogous art, Lidbrink et al. teach wherein the said operation is performed on a training sequence of the received signals (fig. 4 and its description). Since, Kotzin et al. and Lidbrink et al. are related to the method for the wireless communication system; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Kotzin et al. as taught by Lidbrink et al. for purpose of increasing significantly the quality and reliability of the wireless communication services.

Regarding claims 14 and 17, Kotzin et al. disclose the mobile station as claimed in claim 12. But, Kotzin et al. fail to expressly teach wherein the interference estimation unit comprises a Viterbi equalizer. However in analogous art, Lidbrink et al. teach wherein the interference estimation unit comprises a Viterbi equalizer (fig. 7A, Viterbi

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equalizer 117; see col. 9, lines 49-61). Since, Kotzin et al. and Lidbrink et al. are related to the method for the wireless communication system; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Kotzin et al. as taught by Lidbrink et al. for purpose of offering advantageously the mobile device with the built-in Viterbi equalizer.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy Q Phan whose telephone number is 571-272-7924.

The examiner can normally be reached on 8AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kincaid G Lester can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


SONNY TRINH
PRIMARY EXAMINER

Examiner: Phan, Huy Q.

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Date: Mar. 31, 2005